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ABSTRACT

A computer-assisted reading program was implemented in the VESL (Vocational English as a Second Language) Center at Hacienda La Puente Adult Schools (California), which provides support services to adult special needs vocational students. The purpose of the program was to improve the technical reading skills of the vocational students. The basic programs were Educational Activities' Core, Diascriptive Reading, LEAP (Language Experience Approach), and Milliken's Comprehension Power. Fifty students were tracked over a six-month period. Over 150 students were also tested during the study period. Auto mechanics, auto body, and welding students spent the most hours on the computer, spent the most computer instruction time, and were assigned more Lab/VESL time. During the six-month period the 50 students had an average improvement of two years. (Appendixes include a bibliography of most of the materials used in the lab and a bibliography related to computer-assisted instruction. The bibliographies address the needs of both disadvantaged native speakers and limited English proficient students. Some figures showing study results are also appended.) (YLB)

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Incorporating a Computer Assisted Reading Program Into an Adult Vocational Basic Skills Lab

by
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with the assistance of
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ABSTRACT

This paper discusses the incorporation of a computer assisted reading program into an Adult Vocational Basic Skills Lab. The program was funded by VEA monies during the school years of 1986 and 1987. There are charts and graphs that show the tracking of 50 students for a six month period and the test results of over 150 students, as well as a practical review of how this was instituted.

It also includes a bibliography of most of the materials used in the lab and a bibliography related to computer assisted instruction. It addresses the needs of both disadvantaged native speakers and Limited English Proficient Students.

Providing support services to adult school special needs vocational students is an ongoing challenge facing educators today. At Hacienda La Puente Adult Schools, the challenge is being met by the VESL CENTER. which opened in the spring of 1985.

The program is concurrent with vocational training and offers an individualized plan to help students reach their vocational goals. Included may be vocational English as a Second Language (vocabulary, conversation, pronunciation, following directions) vocational training enabling skills (targeted text, manual, form reading, and targeted math), vocational training study skills (videotaped vocational test taking skill development), vocational specific safety, and world-of-work culture.

The typical student attends the VESL Center four to five hours a week at the time assigned. Instruction includes individual and small group tutoring. self-paced study (language master, audio tape, workbook exercise packets), media units (slide/tape, video tape), video disc, and computer assisted instruction.

The core of the VESL Center curriculum is based on occupation specific VESL modules developed by VESL and vocational teachers during the 1978-85 school years, with Refugee Project funding. Vocations supported include Auto Body and Fender Repair. Auto Mechanics, Brake and Front End, Cosmetology. Machine Shop, Nurse Assistant, Welding, Warehouse, Air Conditioning, and Industrial Assembly.

Referral to the VESL Center may be from adult school counselors, special programs (Regugee Project, JTPA, VEA, etc.), external agencies (Rehabilitation, DSS, EDD, etc.) or vocational teachers. The hours of the VESL Center are Monday through Friday: 7:00 a.m. to 5:00 p.m The Center is staffed by two teachers and a teachers' aid.

The purpose of this paper is to describe and discuss the results of a six month study of 50 students enrolled in a computer assisted reading program. Figure 1, page 14, shows the movement of Adult School Clients from the time they enter the program. The goal of the vocational computerized reading program, as was stated in the initial VEA proposal, was to improve the technical reading skills of the vocational students.

In a study in Wisconsin, Farning and Boyce (1976) surveyed vocational-technical graduates and employers in fourteen program areas in order to rank occupational competencies. Results of the survey showed that word recognition, comprehension, and recall of essential information were ranked first in importance by employers in the areas of business machine operation, auto mechanics, auto body, welding, industrial occupations, etc. (1) Since vocational education is generally holistic in its approach to the student, it is critical that functional literacy becomes a part of its agenda.

When this program was initiated, there was a problem of adding another component to a Basic Skills Lab that was already producing to the maximum. Reading is a much more difficult skill to approach than any other of the basic skills. It requires the teacher to constantly monitor, support, assess, and motivate the student. In addition to having low reading skills, most of the students have limited English.

It is impossible to address the reading issue without also taking a serious look at present day theories of second language acquisition. Krashen's hypotheses include two basic principles:

1. Acquisition is more important than learning.
2. To acquire--two conditions are necessary:
    1. Comprehensible input must be available to the learner.
    2. A low affective filter should allow input in.

The implications of these principles suggest that the conscious knowledge of grammar and vocabulary, though necessary and important, is not as important as acquisition--which is the ability to use language for communication. Knowing about language is conscious learning, whereas, knowing the language to communicate involves implicit learning. Further, learners should have the opportunity to comprehend language before they are asked to produce it, shifting the emphasis in language learning acquisition from production, to comprehension before production. Input should come before output. (2)

This theory relates directly to LEP students in the Skills Lab. Listening and reading need to come before speaking. They are expected to compete in a class with native speakers, using texts of reading difficulty that are 3 to 6 years beyond their reading abilities. It is

interesting that in the first month of the reading program, the teachers selected too difficult a level of testing for 70% of the students. In other words, because the students appeared able to mimic or produce appropriate responses to vocational questions, it was not apparent to the teachers that their reading comprehension was dramatically lower than perceived. In order for input to be meaningful, it must appear in context and fall into an environment that is already rich with information so that it can be assimilated and linked with known information.

Lange defines reading as: "...a complex process involving the organization of standardized visual symbols which represent both sound and referents, the processing of those symbols within a text, and the inference of meaning based on those symbols, along with the experience an individual brings to the text." (3)

There are certain assumptions one might draw from this definition in a vocational program. Since the students are disadvantaged native speakers or limited English speakers,if they don't possess a basic sight vocabulary of at least 1000 words, there will be serious comprehension problems. There is no "existing fertile field" for the words of the instructors to fall on. Even if they are mechanically very adept, they will have a lifetime of serious anxiety every time they are asked to write or read a simple note of instructions left by or for a supervisor. They will not able to read important labels on products, such as safety/warning labels; or manufacturers' instructions, charts, and directions, that their texts constantly exhort them to refer to.

The goal of a computerized reading and language program should be to provide a systematic approach for every student. It requires that the teachers involved with this instruction instill a feeling of self worth in each student so that they are motivated to transfer what has been learned in the controlled situation and are able to produce this eventually in the specific vocation and the targeted language. As all teachers of vocational English realize,this is a monumental task! Everyone working with these students must constantly monitor daily activities so that they can provide feedback and suggest off-line activities that would serve to remediate or support current levels of competence.

There is also a problem with Asian students who have been accustomed to studying materials at great levels of difficulty. It is important to transfer their focus to reading easy materials that will serve to get them away from using dictionaries for word by word translations. They must learn to decipher words and develop strategies that will provide understanding from the context--rather than a word-by-word translation. We encourage the students who are working on computers to use the teachers as their dictionaries, if they cannot deduce the meaning contextually. We find that this in itself encourages interactive language and listening skills. It often provides quite a bit of humor as well.

It was probably the most difficult task with all people involved in the program to see the value of easy readings that do not necessarily include specific vocational materials. At the April, 1987 CATESOL Conference, Alice Stiebel presented a report on a six-week course that she taught at Stanford that required students enrolled in graduate technical classes to read easy reading material for one hour every day. and maintain a log on this, identifying reading strategies used and what purpose they served. They were also asked to read a novel during this time. She said that it required vigorous convincing to have them reaize that one does not gain fluency from difficult material. They were taught to refer to their dictionaries as a "last ditch effort." By the end of the six week class there was excellent improvement in reading skills and the students realized the importance of non-technical reading as an impetus to increased reading skills in technical materials. (4)

Mary Lowry, from U. C. Davis, completed research with L2 students based on Harvard's L1 research by Jeanne Chall. Her schema declares that there are five stages through which a student must pass developmentally in order for them to become skilled readers. Stage 2 reading is basically easy reading for pleasure. Lowry states that, "For the non-native language reader--stage 2 must be language specific. ... It is essential that our students learn to use context because L1 research and statistics have shown that good inferencing accounts for the tremendous growth in our children's vocabularies. But formal strategies will not help students draw good inferences in to a text in which the density of unknown words and structures is too high, i. e. a text that is much too hard."(5) Both of these

studies stress the importance of low level reading for LEP students.

It was difficult to settle on basic software to be used in the program. George Mason suggests "...that it is the teacher, not the software that is the primary determiner of the success of most computer programs."(6) Many months were spent in research. Pages 11, 12, and 13 list most of the books and software that are included in the center. The basic programs selected were: Educational_ Activities' Core, Diascriptive Reading, LEAP, and Milliken's Comprehension Power. We felt that it was necessary to provide a tutorial program. Diascriptive Reading begins at a third grade reading level and progresses to the tenth grade. Core was chosen to provide for those students reading below the third grade level. This is a good supplement--but a great deal of teacher time and encouragement is needed at this level in order for them to proceed satisfactorily.

Comprehension Power was selected to give the program some variety and depth. It also focuses attention on left to right patterning with both a comprehension and words per minute score. The students seem to find the stories interesting and enjoy being able to check their speed. Since they must fill in a word, it also helps with their spelling.

LEAP uses a Language Experience approach. At this time it has been used on a limited basis. since teacher time does not permit extensive use. It was used with an extremely articulate deaf welder. It promoted a closeness between the student and teachers that might not otherwise have existed.

Problems exist that are innate to most vocational programs that have LEP students. There is a constant struggle to encourage production outside of the VESL Center. In the shops, they tend to cluster with friends from their own culture and rely on the more advanced in the group for directions or answers to their questions.

Rod Ellis states that: "One of the major problems of the SLA research has been precisely to what extent competence can be inferred from performance. The term 'second language acquisition' refers to the subconscious or conscious processes by which a language other than the mother tongue is learned in a natural or tutored setting. As a result of conscious or unconscious

motives or needs, attitudes or emotional states, the learner is 'open' or 'closed' to L2. Thus, once learners have obtained sufficient L2 knowledge to meet their communicative and emotional needs, they may stop learning. This results in what Selinker(1971) has called fossilization. No matter how much input, and no matter in what form the input is provided--the learner does not learn."(7) If there is not an on-going need for production and listening during the six months to a year in the program--one hour a day of skills instruction will simply not do the job. There must be more emphasis by all teachers on requiring production during simulated or real job tasks.

One hundred fifty- nine students were tested during the six month period from November, 1986 to April, 1987. Nineteen teachers responded to a survey (Figure 2) as to what they perceived as the students' greatest needs. Figure 3 summarizes this survey. The highest ranked problems were Reading for Detail and Using Context for Reading Clues. Basic Sight Vocabulary was chosen only by those teachers working directly with the students in the Lab. The Diascriptive Reading Tests showed that the greatest need was vocabulary development. The results (Figure 4) fell into two groups. Vocabulary, Inference, and Main Idea skills were the major needs of 39, 34, and 30 students out of the 50 tested. Sequence and Details were demonstrated major needs of 18 and 19 students, respectively.

Figure 5 indicates the number of hours spent on the computer by each vocation. The vocations listed are: AC-Air Conditioning, AB-Auto Body, AM-Auto Mechanics (includes Brake/Front End), C-Cosmetology, IA-Industrial Assembly, MS-Machine Shop, WH-Warehouse, and W-Welding. Auto Mechanics, Auto Body, and Welding attracted the most students with 41, 41, and 22 students. The most computer instruction time was also spent by the same three vocations, with 386, 219, and 234 hours. These three groups were assigned more Lab/Vesl time than other vocations. Students with lower ESL skills are traditionally placed in Auto Body or Welding. Auto Mechanics students have a great deal of technical reading, since they need to understand theory, construction design, and chemical effect on smog. Cosmetology has a very heavy load--for they spend eight hours on the floor during the day and generally prefer to spend most of the Lab time with teacher instruction and support for their textbook and exams.

Figure 6 indicates the average start levels for all students in each vocation. Also plotted for each vocation are the start levels and retest levels for the fifty students who have been retested. Note that there was an average improvement of two years during this six month period.

Figure 7 shows the number of students retested in each vocation and their average number of computer hours spent when they were retested. It is difficult to draw meaningful correlations, since there is such a disparity in abilities as well as time to devote to the computer. One Industrial Assembly student had no basic sight vocabulary, and he opted to return to the Lab for many hours every day while he was participating in job search.

Warehouse had the highest beginning level scores with mostly native speakers at 6.5. This is the only class that had a poor sampling, since it is a hundred hour course and only those students who didn't need math remediation were encouraged to take the test. The others really didn't have time to do anything but math.

Auto Body had the lowest reading scores with an average of 3.4. It is also important to remember that those test scores do not really reflect actual reading levels--but rather frustration levels. The true reading levels would be about two grades lower than that. There were about 1300 total hours devoted to computer reading instruction during this time. This has doubled now, since there are eight computers instead of three. In order to ensure that there would be a random sampling of growth, the scores of the first 50 students for whom we had a pre and a post test were used.

Some of the advantages of the program have been:

1. There has been better insight into the students' needs and abilities.

2. It provided an interactive learning environment where the student could receive immediate feedback on answers.

3. There was highly individualized instruction.

4. The instruction was student centered, with the speed

of the lesson directly directly controlled by the student.

5. An inherent motivating influence for the student to learn more was provided.

6. It encouraged off-line reading.

7. This prompted research into the subject and made us aware of other programs--some of which we expect to incorporate into our program.

A personal note of great satisfaction for the teachers came particularly from a few cosmetology students who did not have a basic sight vocabulary when they were initially tested. They have now reached a sixth grade reading level and a few of them have passed the difficult state cosmetology board exam. As is true of most efforts--the most difficult cases bring the greatest rewards.

It has also demonstrated to us that this year has been a very humble beginning. Students and teachers have grown and learned together. Because of our conservative beginnings and with our emphasis on accountability, we may be too strictly learning centered in our approach. We have seen growth and we have been excited by it. We know that by incorporating additional software, and adding more depth to the program, students will make even greater progress.

We don't feel inclined at this time to undertake the task of creating our own software. Underwood quotes Botterell (1982) when he stated that "...only bad software is easy to write. (8) There is a constant need for better software directly related to vocational programs. We could benefit from an authoring system that would permit us to create better curriculum and some adventure games that will include tools and equipment that students work with in their classes. If we simply computerize our present curriculum, we probably will not make much headway. Our individualized instruction could really be enhanced with good use of interactive video with the computer. The first application could be to use this for developing a basic sight vocabulary as an intensive program. This is time consuming for the teacher and could be handled so efficiently on an individualized basis with the video.

In summary, we were pleasantly surprised when we read Barbara Dougherty and Jan Novak's study on the elements required for improvement to take place in Basic Skills. We felt that we came close to meeting their listed characteristics. They are:

1. Strong administrative leadership
2. High expectations and the belief that the teacher can make the difference
3. Teacher-aides used in instruction
4. Reading specialist
5. Teacher training
6. Teacher role: present, diagnose. remediate
7. Specific reading objectives
8. Skills centered curriculum
9. Instruction and materials relevant to goals
10. Structured environment
11. Positive classroom climate
12. Efficient use of time
13. High intensity of treatment
14. Frequent evaluation of student progress

Current research indicates that significant innovation requires at least six years. (9)

We hope that we have presented our model in a sufficiently articulate manner so that it could serve as a springboard for others. All of us working in Vocational Education dream of better methods for preparing our marvelous students for success in their workplace environment.

Works Cited

1. Thornton, L. Jay. Basic Reading Skills & Vocational Education, National Center for Research in Vocational Education, Ohio State University, Ohio (1980) p.12.

2. Lange, Dale. Raschio, Richard. and Wieser, Paul. "An Information Process Model for Computer-Assisted Instruction for Foreign Language Reading." Calico Journal (Dec. 1985) pp. 31-37.

3. Lange, p. 33.

4. Stiebel, Alice. "Using Reading Logs to Help Students Improve Reading Strategies." Address presented at the CATESOL State Conference. Pasadena. California. March 28, 1978.

5. Mason, George. Blanchard, Jay. and Daniel. Danny. Computer Applications in Reading. Second Edition, International Reading Association, Delaware (1983) p. 149.

6. Ellis, Rod. Understanding Second Language Acquisition, Oxford University Press, Great Britain (1985) p.11.

7. Underwood, John. Linguistics, Computers, and the Language Teacher, Newberry House Publishing, Inc. Rowley, MA (1984)p.83.

8. Dougherty, Barbara. Novak, Jan. Basic Skills Improvement, The Vocational Studies Center-School of Education-University of Wisconsin, Madison, January, 1983, CETA Grant No. G4AD-83-968, p.4.

HACIENDA LA PUENTE ADULT EDUCATION

VOCATIONAL ENGLISH AND BASIC SKILLS PROGRAM

BIBLIOGRAPHY

GENERAL VESL

Don't Get Fired. Janus

English That Works, Books 1 & 2. Scott, Foresman

Finding Work. Cambridge, the Adult Education Company

How to Get a Job and Keep It Steck-Vaughn

It's Up to You. Longman.

Let's Work Safely. Linmore Publishing Co. P.O. Box 1545, Palatine, IL 60078

Shifting Gears. Experiment in International Living, Kipling Rd, Brattleboro, VT 05301

Speaking Up at Work. Oxford University Press

Time Cards and Paychecks. Janus

Using the Want Ads. Janus

Your First Job. Prentice Hall

MATH COMPETENCIES

Math for the World of Work. Educ. Design, Inc.

Breakthrough to Math: Levels 1-6. New Readers Press

Essential Mathematics for Life: Decimals & Fractions. Scott, Foresman

Number Power: Addition, Subtraction, Multiplication & Division. Contemporary

Number Power: Fractions, Decimals, & Percents. Contemporary

Practical Problems in Mathematics (Series: Auto Mechanics, Machine Shop, Welding, etc.) Delmar

Math on the Job. The National Center for Research in Vocational Education

READING

Reading for Today. Steck Vaughn

Adult Reading Program. Steck Vaughn

Following Directions. (Series: A - H) Oceana Educational Communications

Identifying Main Ideas. (Series) National Textbook Company

Recognizing Details. (Series) National Textbook Company

A selection of small pocket books for pleasure reading from Alemany, Cambridge, Fearon, Longman, Life-Time

STUDY SKILLS

Using Textbooks Successfully. Scholastic

Test Taking Strategies. Contemporary

LISTENING

Basics in Listening. Lingual House, distributed by Random House

Whaddaya Say. ELS Publications

Improving Aural Comprehension. Univ. of Michigan Press

Back and Forth. Alemany Press

Listening In & Speaking Out. Longman

Strategies in Listening. Lateral Communications

Listening Between the Lines. Addison-Wesley

Functions of American English. Cambridge University Press

WORLD OF WORK CULTURE

Attitudes on the Job. Educational Design

Job Survival Skills. Educational Design

COMPUTER SOFTWARE: MATH

Math Blaster, Davidson & Assoc.

Prescriptive Math Drill. Hartley

Elementary Mathematics Classroom Learning System. Sterling Swift, now Heath

Math Sequence Milliken

COMPUTER SOFTWARE: VOCABULARY, READING & PROBLEM SOLVING

LEAP. Educational Activities

CORE. Educational Activities

Diascriptive Reading: Levels I, II, III. Educational Activities

Comprehension Power. Milliken

Teasers by Tobbs: Puzzles and Problem Solving Sunburst

VESL CAI Modules: Auto Mechanics, Nursing Assistant, Data Entry & Office and Clerical. Clearinghouse for ESL Public Domain Software, 201 Gordy Hall, Ohio State U., Athens OH 45701

VIDEO TAPES

Take Two: English For Intercultural Communication. Intercultural Relations Institute, Palo Alto, CA

Getting a Job. Video Series Los Angeles School District, Refugee Employment Training Project, 1646 S. Olive St., Rm 213, Los Angeles, CA 90015 (213) 742-7015

OCCUPATION SPECIFIC VESL

La Puente Valley Adult Schools - VESL and Basic Skills Center Lab Materials: Auto Body and Fender, Auto Mechanics, Brake and Front End, Machine Shop, Nurse Assistant. Available from DNAE, 1575 Old Bayshore Highway, Burlingame, CA 94010.

San Diego Community College Foundation - various modules: Electronics Assembly, Welding, Auto Upholstery, Retailing, Gardening, Home Health Aide. Available from RTAP ESL Curriculum Development, SDCCD Foundation, East SAn Diego Continuing ED Center, 5350 University Ave., San Diego, CA 92105

Shoptalk. (Series: The Automobile, Metal and Machines, Electronics, etc.) Allyn & Bacon

TELE VESL: Business Telephone Skills. The Alemany Press

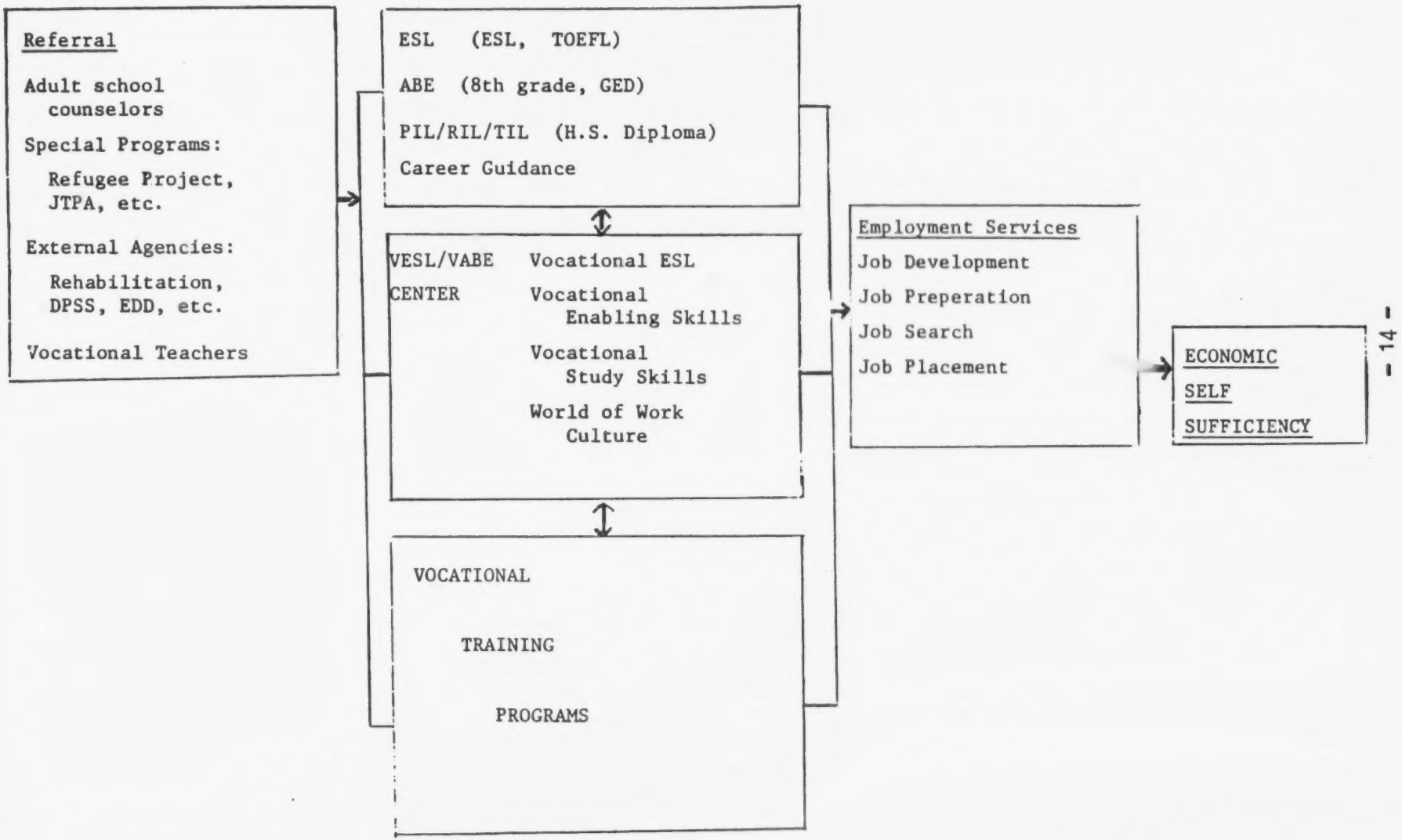
VESL-Welding. The Alemany Press

Practicing Occupational Reading Skills. (Series: Business, Electronics, etc.) Random House

Vocational Math Series. Motivation Dev. Inc.

6/87

FIGURE 1 MOVEMENT OF ADULT SCHOOL CLIENTS WITH VOCATIONAL GOALS



HACIENDA LA PUENTE ADULT EDUCATION

Valley Vocational Center • Innovative Rehabilitation Services • Community/Academic Programs

Placement Programs
15381 E. Proctor
City of Industry, CA 91745

FACULTY SURVEY

The Vocational English and Basic Skills Program is implementing a reading program designed to improve the technical reading of vocational students who have basic skills weaknesses. Your assistance would be appreciated in identifying those reading skill area most important to your vocational program.

Please place an **x** in front of three Reading Competencies you feel are most important to your students:

___ Develop word attack skills and perceptual efficiency

___ Learn and understand a basic sight vocabulary

___ Read for information

___ Understand schedules, maps, charts, and directions

___ Follow directions

___ Get the main idea

___ Read for detail

___ Make inferences or draw conclusions

___ Use the context for reading clues

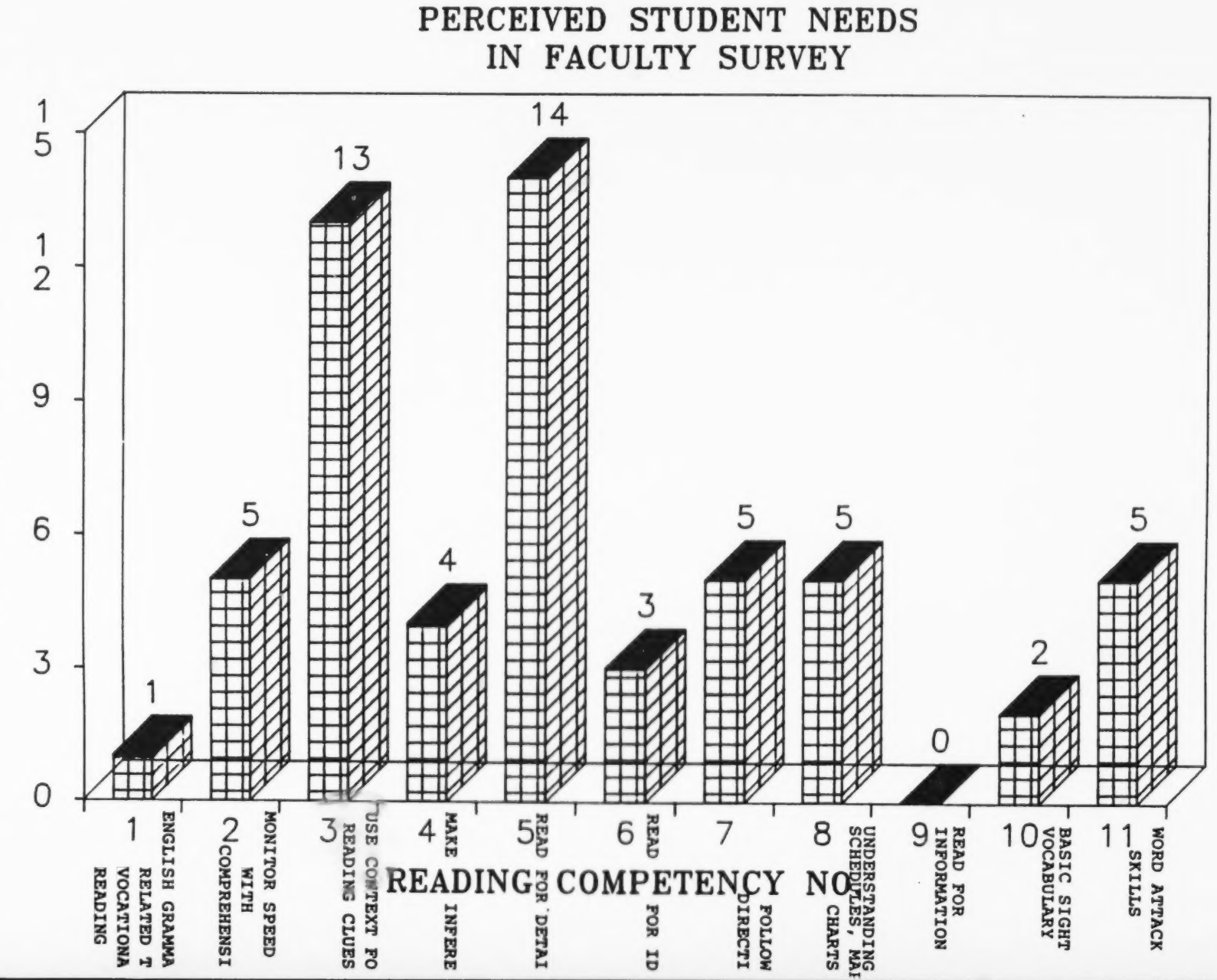
___ Monitor speed with comprehesion

___ Review of English grammar as it relates to Vocational reading comprehension

Any other problems as you see it _____

Thank you for your input.

Vocational English and Basic Skills Program


PERCEIVED STUDENT NEEDS
IN FACULTY SURVEY
NO. OF RESPONSES
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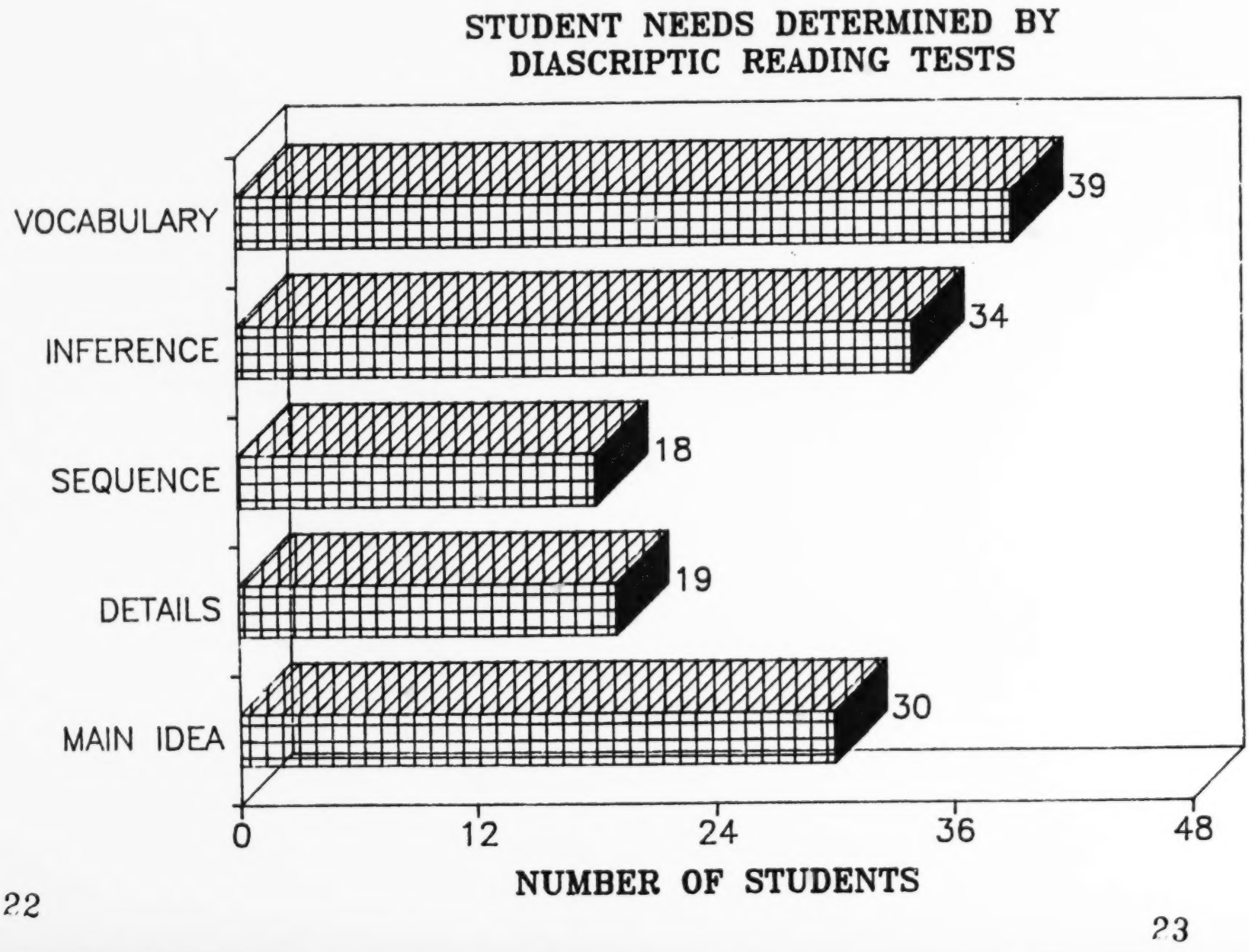
READING COMPETENCY NO
1 ENGLISH GRAMMA RELATED T VOCATIONA READING
2 MONITOR SPEED WITH COMPREHENSI
3 USE CONTEXT FO READING CLUES
4 MAKE INFERE
5 READ FOR DETAI
6 READ FOR ID
7 FOLLOW DIRECTI
8 UNDERSTANDING SCHEDULES, MAI CHARTS
9 READ FOR INFORMATION
10 BASIC SIGHT VOCABULARY
11 WORD ATTACK SKILLS

FIGURE 3


STUDENT NEEDS DETERMINED BY
DIASCRIPTIC READING TESTS
STUDENT NEEDS
VOCABULARY
INFERENCE
SEQUENCE
DETAILS
MAIN IDEA
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19
30
0
12
24
36
48
NUMBER OF STUDENTS

FIGURE 4

COMPUTER INSTRUCTION EFFORT BY VOCATION

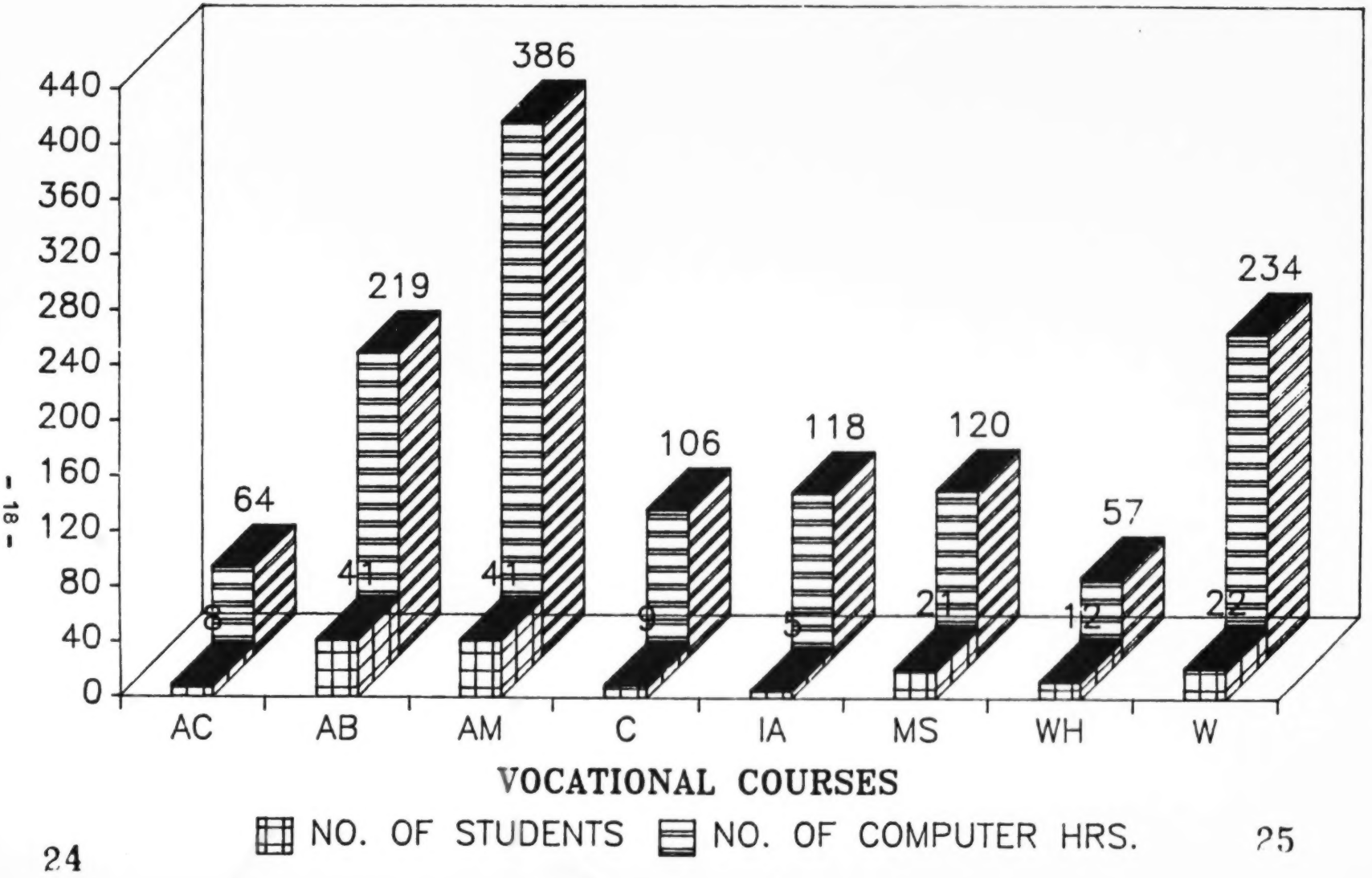
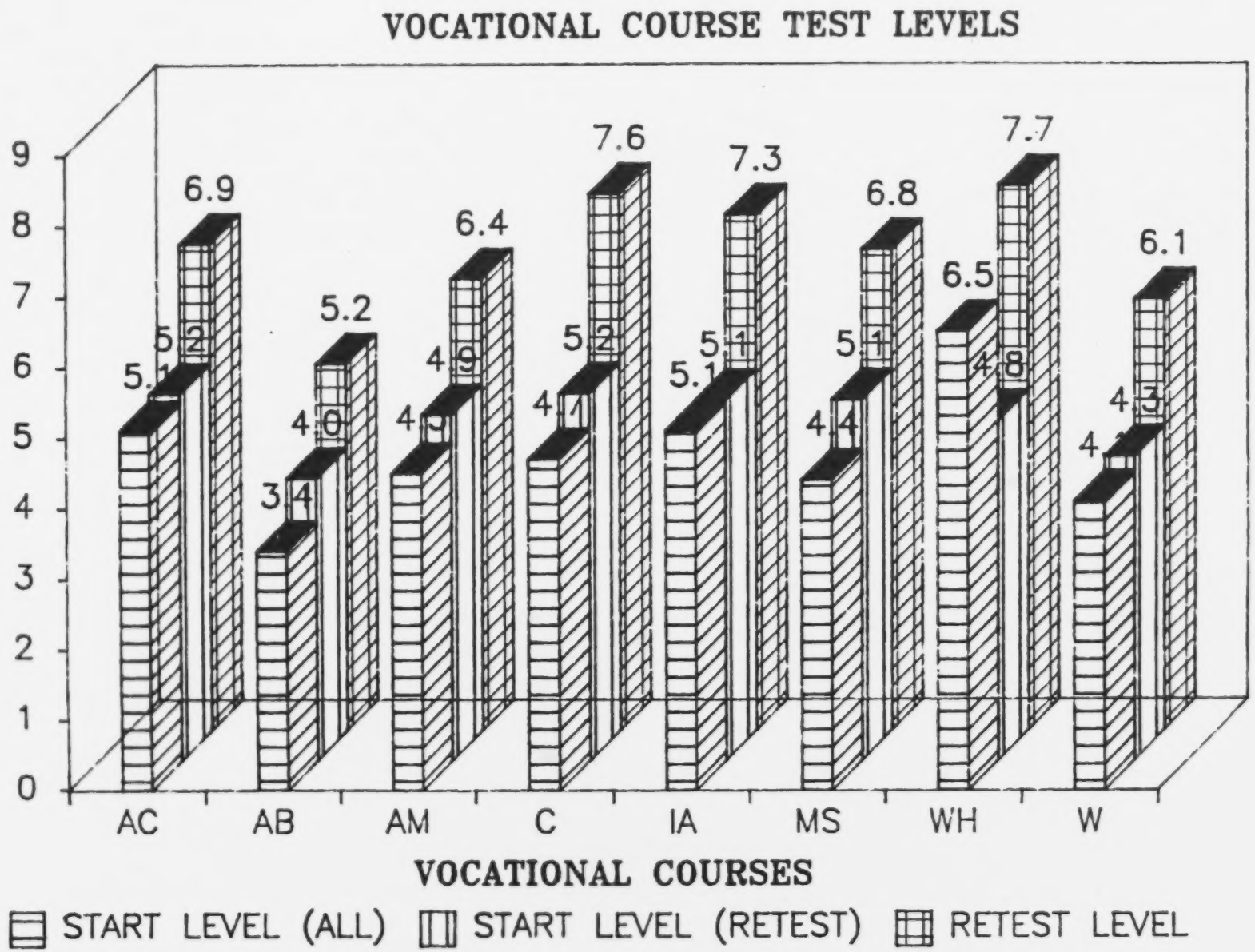


FIGURE 5


VOCATIONAL COURSE TEST LEVELS
TEST LEVELS
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5.1
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START LEVEL (RETEST)
RETEST LEVEL

FIGURE 6

RETEST DATA BY VOCATION

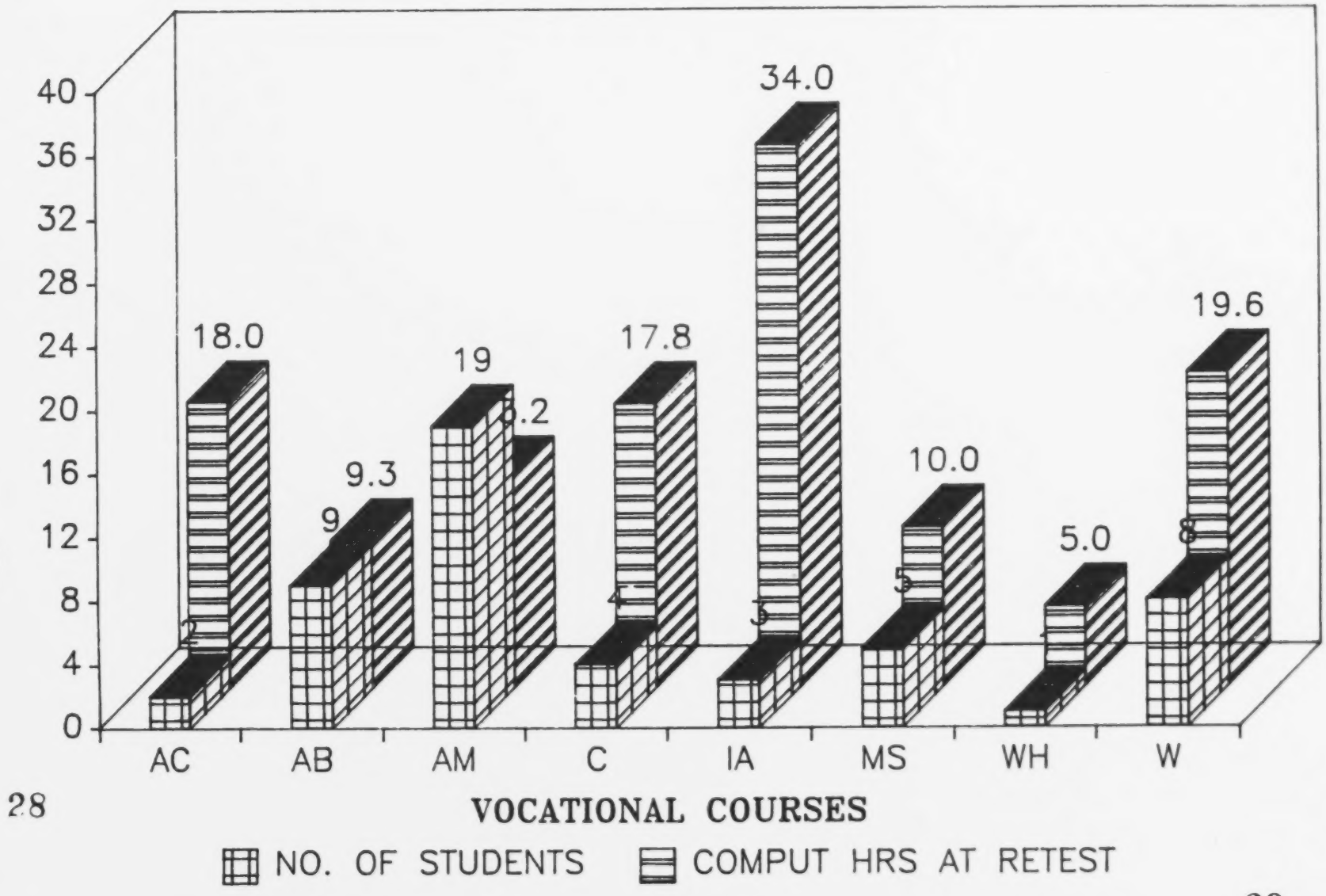

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FIGURE 7

BIBLIOGRAPHY

Ahmad, Khurshid. Corbett, Greville. Rogers, Margaret. and Sussex, Roland. Computers, Language Learning and Language Teaching, Cambridge University Press (1985).

Askov, Eunice N. and Cole, Peter G. Computer Assisted Instruction for Teaching Adults Beginning Reading. Adult Literacy & Basic Education, V. IX(1985) EJ 333843 pp. 57-67.

Balajthy, Ernest. Microcomputers in Reading and Language Arts, Prentice-Hall, Inc. Englewood Cliffs, New Jersey (1986).

Bitter, Gary G. and Camuse, Ruth. Using a Microcomputer in the Classroom, Reston Publishing Company, Inc. (1984).

Bork, Alfred. Personal Computers for Education, Harper and Row (1985).

Bramble, William J. and Mason, Emanuel J. Computers in Schools. McGraw Hill Book Co. (1985).

Brumfit, Christopher. Computers in English Language Teaching. Pergamon Press(1985).

Coburn, P. Kelman, P. Roberts, N. Snyder, T. Practical Guide to Computers in Education, Addison-Wesley (1982).

Dennis, Richard. Kansky, Robert. Instructional Computing, Scott Foresman and Company (1984).

Dickson, Wayne. Raymond, Mike. Language Arts Computer Book. Reston Publishing Company, Inc. (1984)

Dougherty, Barbara. Novak, Jan. Basic Skills Improvement. The Vocational Studies Center, School of Education, University of Wisconsin-Madison (1983) CETA Grant No. G 4 AD-83-968.

Ellis, Rod. Understanding Second Language Acquisition. Oxford University Press, Great Britain (1985).

Fader, Daniel. McNeil, Elton. Hooked on Books: Program and Proof. Berkley Publishing Corporation (1966).

Finnerty, Kathy. Cosmetology Computerized Learning Modules. Oswego County Board of Cooperative Educational Services, New York (1981) 752 pp.

Geoffrion, L. D. Geoffrion, O. P. Computers and Reading Instruction, Addison Wesley (1983).

Goldenberg, Paul. Computers, Education and Special Needs, Addison Wesley (1984).

Gordon, Ruth. Smink, Joy. Data Bases and Clearinghouses. Information Resources for Education, Ohio University, Ohio (1982).

Hertz, Robert M. Computers in the Language Classroom. Addison Wesley Publishing Company, (1986).

Higgins, J. John, Johns Tim. Computers in Language Learning, Addison Wesley (1984)

Jamieson, Joan. Chapelle, Carol. "Prospects in Computer Assisted Language Lessons," CATESOL Occasional Papers. No. 10 pp. 17-34 (fall 1984) ED 253062.

Jones, Christopher. Using Computers in the Language Classroom, Longman (1987).

Judd, Dorothy. Judd, Robert C. Mastering the Micro. Scott, Forseman and Co.,Glenview, Illinois (1984).

Kenning, M. J. Kenning, M-M. An Introduction to Computer Assisted Language Teaching. Oxford University Press (1983).

Kossuth, Karen."Using the Adventure Formats for CALI." Calico Journal. (Dec. 1985) pp. 13-18.

Kral, Thomas."Educational Technology and Effective Growth in Second Language Classrooms." Calico Journal. (June 1986) pp. 11, 12, 47, 48.

Krashen, A. Selinger, H."The Essential Contributions of Foreign Instruction in Adult Second Language Learning." TESOL Quarterly IX (1975) pp. 173-183.

Leech, G. Candling, C., Computers in English Language Teaching and Research. Longman (1986).

Lipson, Joseph. Educational Technology in Vocational Education. The National Center for Research in Vocational Education, Ohio State University, Ohio (1984).

Lotto, Linda S. Building Basic Skills, Results from Vocational Education. The National Center for Research in Vocational Education, Ohio University, Ohio (1983).

Olivier, William. Videodiscs in Vocational Education, ERIC Clearinghouse onAdult, Career, and Vocational Education (1995).

Simpson, Mark. Bolduc-Simpson, Sheila."Developing a computer Assisted Reading Instruction Program," Calico Journal (September 1984) pp. 34-40.

Thornton, Jay L. Basic Reading Skills and Vocational Education. National Center for Research in Vocational Education, Ohio State University, Ohio (1980).

Underwood, J. Linguistics, Computers, and the Language Teacher. Newbury House (1984).

Vacc, Nancy N."Computers in Adult Education, Writing, and Reading." Lifelong Learning VII, pp. 26-28, 31 April (1984) EJ 297626.

Wyatt, David. (Ed.). Computer-Assisted Language Instruction, Pergamon Press (1984).

Wyatt, David. Computers and ESL. Harcourt Brace Jovanovich, Inc.(1984).

Zahniser, Gale, Long, James, Leonard. An Administrators Guide to Microcomputer Resources. The National Center for Research in Vocational Education (1983).

Zettersten, Arne. New Technology in Language Learning. Pergamon Press (1985).